

## Environmental Protection Agency

## § 86.1312-88

approved in advance by the Administrator.

(2) The carbon monoxide (NDIR) analyzer may require a sample conditioning column containing  $\text{CaSO}_4$ , or desiccating silica gel to remove water vapor, and containing ascarite to remove carbon dioxide from the CO analysis stream.

(i) If CO instruments are used which are essentially free of  $\text{CO}_2$  and water vapor interference, the use of the conditioning column may be deleted (see §§ 86.1322 and 86.1342).

(ii) A CO instrument will be considered to be essentially free of  $\text{CO}_2$  and water vapor interference if its response to a mixture of three percent  $\text{CO}_2$  in  $\text{N}_2$ , which has been bubbled through water at room temperature, produces an equivalent CO response, as measured on the most sensitive CO range, which is less than one percent of full scale CO concentration on ranges above 300 ppm full scale or less than 3 ppm on ranges below 300 ppm full scale (see § 86.1322).

(3)(i) Using a methane analyzer consisting of a gas chromatograph combined with a FID, the measurement of methane shall be done in accordance with SAE Recommended Practice J1151, "Methane Measurement Using Gas Chromatography." (Incorporated by reference pursuant to § 86.1(b)(2).)

(ii) For natural gas vehicles, the manufacturer has the option of using gas chromatography to measure NMHC through direct quantitation of individual hydrocarbon species. The manufacturer shall conform to standard industry practices and use good engineering judgement.

(c) *Alternate analytical systems.* Analysis systems meeting the specifications of subpart D of this part may be used for testing required under this subpart, with the exception of §§ 86.346 and 86.347, provided that the systems in subpart D of this part meet the specifications of this subpart. Heated analyzers may be used in their heated configuration.

(d) *Other analyzers and equipment.* Other types of analyzers and equipment may be used if shown to yield

equivalent results and if approved in advance by the Administrator.

[59 FR 48525, Sept. 21, 1994, as amended at 59 FR 50073, Sept. 30, 1994; 61 FR 127, Jan. 3, 1996; 62 FR 54730, Oct. 21, 1997]

### § 86.1312-88 Weighing chamber and microgram balance specifications.

(a) *Ambient conditions.* (1) *Temperature.* The ambient temperature of the chamber (or room) in which the particulate filters are conditioned and weighed shall be maintained at  $295 \text{ K} \pm 3 \text{ K}$  ( $22^\circ\text{C} \pm 3^\circ\text{C}$ ) during all filter conditioning and weighing.

(2) *Humidity.* The humidity of the chamber (or room) in which the particulate filters are conditioned and weighed shall be maintained at a dew point temperature of  $282.5 \text{ K} \pm 3 \text{ K}$  ( $9.4^\circ\text{C} \pm 3^\circ\text{C}$ ) and a relative humidity of  $45\% \pm 8\%$ . Either the dew point temperature or the relative humidity or both may be averaged over the preceding 10 minute period on a moving average basis.

(3) The chamber (or room) environment shall be free of any ambient contaminants (such as dust) that would settle on the particulate filters during their stabilization. It is required that at least two unused reference filter pairs remain in the weighing room at all times in covered (to reduce dust contamination) but unsealed (to permit humidity exchange) petri dishes. These reference filter pairs shall be placed in the same general area as the sample filters. These reference filter pairs shall be weighed within 4 hours of, but preferably at the same time as, the sample filter pair weighings.

(4) If the average weight of the reference filter pairs changes between sample filter weighings by more than 40 micrograms, then all sample filters and background filters in the process of stabilization shall be discarded and the emissions tests repeated.

(5) If the room (or chamber) environmental conditions are not met, then the filters shall remain in the conditioning room for at least one hour after correct conditions are met prior to weighing.

(6) The reference filter pairs shall be changed at least once a month, but never between clean and used

weighings of a given sample filter pairs. More than one set of reference filter pair may be used. The reference filters shall be the same size and material as the sample filters.

(b) *Weighing balance specifications.* The microgram balance used to determine the weights of all filters shall have a precision (standard deviation) of 20 micrograms and readability of 10 micrograms.

(Secs. 202, 203, 206, 207, 208, 301a, Clean Air Act, as amended; 42 U.S.C. 7521, 7522, 7525, 7541, 7542, 7601a)

[50 FR 10702, Mar. 15, 1985, as amended at 52 FR 47871, Dec. 16, 1987; 62 FR 47124, Sept. 5, 1997]

#### § 86.1313-91 Fuel specifications.

(a) *Otto-cycle test fuel.* (1) Gasoline having the specifications listed in table N91-1 will be used by the Administrator in exhaust emission testing petroleum-fueled substantially equivalent specifications approved by the Administrator, shall be used by the manufacturer in exhaust emission testing, except that the octane specification does not apply.

TABLE N91-1

Item		ASTM	Value
Octane, re-		D2699 ..	93
search, min.			
Sensitivity, min			7.5
Lead (organic)	g/U.S. gal. (g/liter).	D3237 ..	<sup>1</sup> (0.050) <sup>1</sup> (0.013)
Distillation			
range:			
IBP .....	°F .....	D86 .....	75-95
	( °C) .....		(23.9-35)
10 pct. point	°F .....	D86 .....	120-135
	( °C) .....		(48.9-57.2)
50 pct. point	°F .....	D86 .....	200-230
	( °C) .....		(93.3-110)
90 pct. point	°F .....	D86 .....	300-325
	( °C) .....		(148.9-162.8)
EP .....	max. °F, .....	D86 .....	415
	( °C) .....		(212.8)
Sulphur .....	max. wt. pct. ...	D1266 ..	0.10
Phosphorus,	g/U.S. gal. (g/liter).	D3231 ..	0.005
max..			(0.0013)
RVP .....	psi, (kPa) .....	D323 .....	8.0-9.2
			(60.0-63.4)
Hydrocarbon			
composition:			
Olefins .....	max. pct. ....	D1319 ..	10
Aromatics .....	max. pct. ....	D1319 ..	35
Saturates .....		D1319 ..	( <sup>2</sup> )

<sup>1</sup> Maximum.  
<sup>2</sup> Remainder.

(2) Unleaded gasoline representative of commercial gasoline which will be

generally available through retail outlets shall be used in service accumulation.

(i) The octane rating of the gasoline used shall be not higher than one Research octane number above the minimum recommended by the manufacturer and have a minimum sensitivity of 7.5 octane numbers, where sensitivity is defined as the Research octane number minus the Motor octane number.

(ii) The Reid Vapor Pressure of the gasoline used shall be characteristic of the motor fuel used during the season in which the service accumulation takes place.

(3) Methanol fuel used for exhaust and evaporative emission testing and in service accumulation of methanol-fueled Otto-cycle engines shall be representative of commercially available methanol fuel and shall consist of at least 50 percent methanol by volume.

(i) Manufacturers shall recommend the methanol fuel to be used for testing and service accumulation in accordance with paragraph (a)(3) of this section.

(ii) The Administrator shall determine the methanol fuel to be used for testing and service accumulation.

(4) Other methanol fuels may be used for testing and service accumulation provided:

(i) They are commercially available, and

(ii) Information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in customer service, and

(iii) Use of a fuel listed under paragraph (a)(3) of this section would have a detrimental effect on emissions or durability, and

(iv) Written approval from the Administrator of the fuel specifications must be provided prior to the start of testing.

(5) The specification range of the fuels to be used under paragraphs (a)(2), (a)(3), and (a)(4) of this section shall be reported in accordance with § 86.090-21(b)(3).

(b) *Diesel Test fuel.* (1) The petroleum fuels for testing diesel engines employed for testing shall be clean and bright, with pour and cloud points adequate for operability. The petroleum